

Fluke Leakage Clamp Meter

NEW

- Measure leakage current with 1 μ A resolution, for monitoring of insulation erosion
- Measure to 60 A, for general installation needs
- Perform tests without powering down the installation or disconnecting equipment
- Advanced shielding ensures accurate results when measuring near other conductors
- Easy-to-carry, pocket-sized clamp with 40 mm (1.5") jaw size
- Handy "Display-Hold" button for capturing readings in hard-to-reach places
- Auto power-off, with warning buzzer, saves battery life
- Meets safety standard VDE0404-4 and VDE0702 for leakage current and differential current measurement of electrical appliances



360

ORDERING INFORMATION

Fluke-360

Leakage Current Clamp Meter

Hioki AC Power Monitors

Clamp-On Power HiTester

- Measure up to two 3Ø, 3-wire systems
- Measure up to four 1Ø, 2-wire systems
- 5A to 5000A range
- Simultaneous recording of demand values and harmonics
- Ideal for troubleshooting & energy management



3169

Power Quality Analyzer

- Measure Dips, Swells, Interruptions, Flicker, Transients
- Harmonic to the 50th order
- High frequency transient over voltage
- Detection and waveform display
- 4 current and 4 voltage channels



3196

ORDERING INFORMATION

Order Clamp-on Sensor Separately

HK/3169-20 Clamp-On Power HiTester, with voltage leads

HK/3196 Power Quality Analyzer, with voltage leads

HK/9660 100A Clamp-On Sensor

HK/9661 500A Clamp-On Sensor

HK/9669 1000A Clamp-On Sensor

HK/9667 5000A Flexible Clamp-On Sensor

HK/9694 5A Clamp-On Sensor

Other Options: Printer, memory cards, PC software, carrying case

SPECIFICATIONS

Ranges:	3 ma, 30 mA, 30 A, 60 A
Resolution:	0.001 mA, 0.01 mA, 0.01 A, 0.1 A
Accuracy:	$\pm 1\%$ rdg $\pm 5d$ (≤ 50 A)
(50/60 Hz)	$\pm 5\%$ rdg $\pm 5d$ (> 50 A)
Frequency range:	15-150 Hz
Maximum current:	60 A rms
Digital display:	3200 count LCD
Bargraph display:	32 segment LCD
Measurement cycle:	2/sec. (digital display), 12 /sec. (bargraph display)
Range switching:	Auto-range
Environment:	0-50 °C, <80 % RH (non-condensing)
Temperature coefficient:	<0.05 % of range/°C (0-18 °C & 28-50 °C, <50 A)
Influence of external magnetic field:	0.0005 % typical (on current value of adjacent cable)
Influence of conductor position:	Within accuracy
Circuit voltage:	≤ 300 Vrms
Safety standard:	EN 61010-1, EN 61010-2-032, 300 V CAT II, Pollution Degree 2
Battery type:	3 V Lithium battery (CR2032)
Battery life:	Approx. 90 hours (continuous use)
Conductor diameter	40 mm (1.57") max.
Dimensions:	176 x 70 x 25 mm (6.9" x 2.8" x 1")

3169 SPECIFICATIONS

Systems:	1Ø 2-wire, 1Ø 3-wire, 3Ø 3-wire, 3Ø 4-wire (50/60 Hz)	Accuracy:	$\pm 0.2\%$ rdg $\pm 0.1\%$ f.s. + Clamp accuracy (for active power)
Functions:	ACV, ACA, W, VA, VAR, PF, integrated power, Frequency, Harmonics		With 9660: $\pm 0.3\%$ rdg $\pm 0.02\%$ FS
Ranges:	150/300/600V		With 9661: $\pm 0.3\%$ rdg $\pm 0.01\%$ FS
	With 9660: 5-100A, 4 ranges		With 9669: $\pm 1.0\%$ rdg $\pm 0.01\%$ FS
	With 9661: 5-500A, 5 ranges		With 9667: $\pm 2.0\%$ rdg ± 1.5 mV
	With 9669: 100A-1kA, 3 ranges		With 9694: $\pm 0.3\%$ rdg $\pm 0.02\%$ FS
	With 9667: 500A-5kA, 2 ranges		
Power:	With 9694: 0.5A-5A, 3 ranges	Harmonics:	Up to the 50th order, $\pm 3\%$ FS + measurement accuracy
	75W to 9MW, 108 combination patterns	Power:	100 to 240VAC, 50/60 Hz
		Dimensions:	8.3" W x 6.3H x 2.4" D

3196 SPECIFICATIONS

Systems:	1Ø 2-wire, 1Ø 3-wire, 3Ø 3-wire, 3Ø 4-wire (50/60 Hz)
Ranges:	Ch1, Ch2, Ch3: 150/300/600V AC
	Ch4: 60/150/300/600V DC, 60/600V DC
	9660: 50/100A, 9661: 50/500A, 9667: 500/5000A, 9669: 1000A
Measurements:	1. Transient overvoltage
	2. Voltage swell, Voltage dip, Voltage interruption
	3. Frequency, Voltage, Current, Voltage/Current peak, Active/Reactive /Apparent power, Power factor, DPF
	4. Voltage unbalance ratio, Current unbalance ratio
	5. Harmonic voltage/current/power, Inter harmonic voltage/current, Harmonic voltage current phase angle, Total harmonic/inter harmonic distortion
	6. IEC flicker[Pst, Plt], K factor / $\Delta V10$ (Japan)
Internal Memory:	13MB
Interface:	Flash ATA card (up to 528MB), RS-232C, LAN (10BASE-T), HTTP server function
Power:	Rechargeable battery & AC adapter
Dimensions:	11.8" W x 8.5" H x 2.7" D

TEST EQUIPMENT

Extech AC Power Clamp Meter

NEW

- Dual LCD display (9999 count)
- Measures 1Ø/3Ø True Power (kW), Apparent Power (kVA), Reactive Power (kVAR), plus Horsepower (HP), Power Factor and Phase Angle with Lead/Lag indicator
- AC+DC μ A current with 10nA resolution for flame rod tests
- Insulation Resistance tests to 100M Ω
- Type K temperature to 1000°F (900°C)
- 1.6" (40mm) clamp jaw opening
- Max/Min recording with elapsed time indication
- Auto Detect AC/DC Voltage measurements with simultaneous frequency display
- Diode and Continuity tests
- Category III 600V rating

 UL
LISTED

Complete with deluxe test lead kit, general purpose Type K thermocouple probe, carrying case and 9V battery.



380976

SPECIFICATIONS

Function	Max Range / Resolution	Basic Accuracy
True Power (W):	600kW / 10W	±5%
Apparent Power (kVA):	600kVA / 100VA	±2%
Reactive Power (kVAR):	600kVAR/10VAR	±5%
Horsepower (HP):	800HP / 0.01HP	±5%
Phase Angle:	-60 to +60° / 0.1°	±6°
AC Current (Trms):	1000A / 10mA	±2%
μ A Current (AC+DC Trms):	1000 μ A / 10nA	±1%
AC/DC Voltage (Trms):	600V / 0.1mV	±1%
Resistance:	1000 Ω / 0.1 Ω	±1%
Resistance (M Ω):	100M Ω / 1k Ω	±5%
Capacitance:	7000 μ F / 1nF	±1.5%
Frequency:	40Hz to 1kHz / 0.1Hz	±0.5%
Temperature (Type K):	-58 to 1000°F / 0.1°F	±1%
	-50 to 900°C / 0.1°C	±1%
Dimensions:	9" x 3" x 1.6" (228 x 76 x 39mm)	

ORDERING INFORMATION

EX/380976-K 1000A 1Ø 3Ø AC Power Clamp Meter

Yokogawa AC/DC Clamp-On Power Meter

- AC & DC Power up to 600 kW
- True RMS for AC
- Harmonics 1st to 25th order
- Power fluctuation using the ACA Inrush and Peak Hold functions
- AC & DC Voltage to 1000 V
- AC & DC Current to 600 A
- Frequency, Resistance, Continuity, Diode check, Power factor
- White LED automatically illuminates front of jaw when clamping
- Category IV 600V & CAT III 1000V compliant

Complete with test leads, carrying case and 9V battery.



CW10

SPECIFICATIONS

Function	Range	Accuracy
AC Current:	99.99 / 600.0	±(1.5% Rdg + 5 LSD) @ 50/60Hz
AC Voltage:	99.99 / 999.9	±(1% Rdg + 5 LSD), 50-500Hz
DC Current:	99.99 / 600.0	±(1.5% Rdg + 5 LSD)
DC Voltage:	99.99 / 999.9	±(0.7% Rdg + 2 LSD)
Active Power (kW):	9.999 / 99.99 / 600.0	±(2.5% Rdg + 11 LSD) AC ±(2.2% Rdg + 22 LSD) DC
Inrush Current:	99.99 / 600.0	±(2.5% Rdg + 20 LSD)
Resistance:	1k / 10k / 100k	±(1.0% Rdg + 5 LSD)
Frequency:	100 / 1000 / 10k	±(0.5% Rdg + 3 LSD)
Harmonics:	99.99%	1-12: ±(5% Rdg + 10 LSD) 13-25: ±(10% Rdg + 10 LSD)
Power Factor:	-1.00 to 1.00	±(3° + 2 LSD)
Peak Hold (ACV, ACA):	40% overrange	±(3% Rdg + 15 LSD)
Dimensions:	9.6" x 7" x 2.0" (242 x 87 x 51mm)	

ORDERING INFORMATION

YE/CW10 AC/DC Clamp-on Power Meter

Amprobe Compact Power Quality Clamp

- AC/DC Voltage up to 600V, AC Current up to 600A, Resistance, Frequency; Active (W), Reactive (VAR) and Apparent (VA) Power with dual display Power Factor readout, KWh Recording
- Slim jaws fit in tight spaces & accommodate conductors up to 1.02" (26mm) diameter
- Auto Selection of AC Volts, DC Volts or AC Amps
- 3 phase unbalanced load measurement by calculation of discrete single phase measurements
- Overload protection for all functions to 600V AC and DC
- Peak hold, data hold, audible continuity test
- Optional PC interface capability
- Safety CAT III 600V

UL

Supplied with test leads & battery.



ACD-45PQ

SPECIFICATIONS

Function	Range	Accuracy
AC Current:	40.00 / 400.0 / 600A	±(1.0% Rdg + 5 LSD) @ 50/60Hz
AC Voltage:	600.0V	±(0.5% Rdg + 5 LSD) @ 50/60Hz
DC Voltage:	600.0V	±(0.5% Rdg + 5 LSD)
Resistance:	999.9 Ω	±(1.0% Rdg + 6 LSD)
Frequency:	5.00Hz to 500.0Hz	±(0.5% Rdg + 4 LSD)
Active Power (W):	0 to 360.0 kW	±(2.0% Rdg + 6 LSD) @ Harmonics to 10th & PF 0.1 to 0.99
Reactive Power (VAR):	0 to 360.0 kVAR	±(2.0% Rdg + 6 LSD) @ Harmonics to 10th & PF > 0.7
Apparent Power (VA):	0 to 360.0 kVA	±(2.0% Rdg + 6 LSD) @ Harmonics to 10th
Power Factor:	0.10 to 0.99	± 3 LSD @ Harmonics to 21th
Dimensions:	10.5" x 7" x 3.2" (267 x 178 x 82mm)	

ORDERING INFORMATION

AB/ACD-45PQ 600A Power Quality Clamp

Yokogawa Clamp-on Power Monitors/Analyzers



CW121 Clamp-on Power Monitor

For maintenance and long term monitoring of electrical equipment and systems.

- Supports 1Ø 2W to 3Ø 4W systems
- Internal flash card memory
- RS-232 or RS-485 communications
- Sends data to internal memory, PC, optional floppy disk or printer
- Compact and light weight unit

SPECIFICATIONS

Voltage:	150, 300, 450 ACV
Current:	20 - 3000 ACA
Measurement Parameters:	V, A, VAR, PF, Hz, Wh
Accuracy:	±0.8% rdg ± 0.4% rng, depending on clamp probe
Record Time:	Settable from 1-30 sec., 1-30 min., 1 hr.
Flash Memory:	Compatible up to 128 MB flash card
External I/O:	One of three options for start / stop Wh
Data Accumulation:	24 hours of data in one second intervals
Wiring Error Check:	Function ensures correct measurement operations
Communications:	RS-232 standard, RS-485 available
Display:	Large backlit LCD
Safety:	UL approved
Dimensions:	4.6" W x 6.4" H x 2.0" D (117x161x51mm)
Power:	100 - 240V AC, 50/60Hz (CAT II)

ORDERING INFORMATION

YE/CW121-D-1/SP1 Clamp-on Power Monitor with complete accessory package

Includes all required hardware and software, except clamp-on current probes: Portable Clamp-on Power Meter, UL/CSA standard power cord, four voltage probes, RS-232 communications, 9 pin RS232 communication cable, 16 MB flash memory card and card holder, flash card reader and cable, power cable. (Supplies power from measured circuit), magnetic case for power meter, carrying case for power meter and accessories, data analysis software package.

Add suffix to part number for correct size Current Clamp-on Probes:

/C2	Clamp-on Probes for 20/200A (3pcs / set)
/C4	Clamp-on Probes for 500A (3pcs / set)
/C6	Clamp-on Probes for 700A (3pcs / set)
/C8	Clamp-on Probes for 50A (3pcs / set)
/96034	Clamp-on Probe for 3000A Jaw type
/96035	Clamp-on Probe for 3000A Flexible type



CW240 Clamp-on Power Analyzer

Records electric energy measurements, instantaneous measurements, demand measurements, waveform measurements, voltage fluctuation measurements, harmonics measurements and leakage current.

- Supports 1Ø 2W to 3Ø 4W 4i (neutral line current) systems
- Supports two system measurements (1Ø 2W X2) (1Ø 3W X2) (3Ø 3W X2)
- Data logging interval up to 1 hour
- Internal flash card memory system
- RS-232 or RS-485 communications
- Sends data to internal memory, PC, optional floppy disk or printer

SPECIFICATIONS

Voltage:	150, 300, 600, 1000 ACV
Current:	200.0 ACmA - 3000 ACA
Measurement Parameters:	V, A, VAR, PF, HZ, WATTS, VA, PA
Record Time:	1 cycle- 0.5 sec., 1-30 sec., 1-60 min .
Flash Memory:	Compatible up to 512 MB flash card
Harmonic Measurement:	up to 50th
Wiring Error Check:	Function ensures correct measurement operations
Communications:	RS-232 standard, RS-485 available
Display:	Large backlit LCD
Safety:	UL approved
Operating temperature:	5-40°C, 5-80% RH (no condensation)
Dimensions:	8.11" W x 7.25" H x 2.56" D (206 x 184 x 65mm)
Power:	100 - 240V AC, 50/60Hz (CAT II)
Location:	Indoor use

ORDERING INFORMATION

YE/CW240-D/DA/PMI/SPI Clamp-on Power Analyzer with complete accessory package. Includes all required hardware and software, except clamp-on current probes (see below): UL/CSA standard power cord, four voltage probes, NiMH battery pack & six AA alkaline batteries, carrying case, 16 MB flash card and card reader, 9 pin RS-232 cable and Toolbox software package, users manual, quick manual, communications manual.

Add suffix to part number for correct size Current Clamp-on Probes:

/C2	Clamp-on Probes for 20/200A (4 pcs / set)
/C4	Clamp-on Probes for 500A (4 pcs / set)
/C6	Clamp-on Probes for 700A (4 pcs / set)
/C8	Clamp-on Probes for 50A (4 pcs / set)
/C10	Clamp-on Probes for 2A (4 pcs / set)
/C12	Clamp-on Probes for 3000A Jaw type (4 pcs / set)
/C14	Clamp-on Probes for 3000A Flexible type (4 pcs / set)
/96036	Clamp-on Probe for 2A measurement
Optional	AP240E Data analysis software package

Hioki Power Quality Analyzer

Catch power quality problems on the fly.

- Monitor Inrush Current, Voltage Swells, Voltage Dips, Transient Over-Voltage, Interruptions
- Measure and Record: Power and Power Factor, Active/Reactive Energy, Demand, Load Changes (with graph display), Voltage and Current
- Large 4.7" Color LCD with Backlight

3197
& three
9661
sensors



ORDERING INFORMATION

HK/3197	Power Quality Analyzer
HK/9660	100A Clamp-on Sensor (300V, Ø15mm jaw)
HK/9661	500A Clamp-on Sensor (300V, Ø46mm jaw)
HK/9667	5000A Flexible Clamp-on Sensor (1000V, Ø254mm jaw)
HK/9669	1000A Clamp-on Sensor (600V, Ø55mm jaw)
HK/9694	5A Clamp-on Sensor (300V, Ø15mm jaw)
HK/9624-50	Deluxe PQA Analysis Software

Includes: voltage cord set, 6 hour battery pack (rechargeable), AC adapter, USB cable, basic PC software, carrying case & strap. Order current sensors separately.

SPECIFICATIONS

Measurement lines:	Single-phase 2-wire (1P2W), single-phase 3-wire (1P3W), three-phase 3-wire (3P3W2M & 3P3W3M), three-phase four-wire (3P4W and 3P4W2.5E)
Measurement line frequency:	Auto-detect (50Hz/60Hz)
Voltage range:	600.0V AC (crest factor 2 or less)
Current ranges:	500.0mA, 5.000A, 50.00A, 10.00A, 100.0A, 500.0A, 1.000A, 5.000 kA (manually switchable in 2 range sets according to clamp sensor)
Measurement items:	
Impulsive voltage quality:	Transient overvoltage (Impulse)
RMS voltage quality:	Voltage swell, Voltage dips, Voltage interruption
Power quality:	Frequency, Voltage, Current, Current peak, Active/Reactive/Apparent power, Power factor (displaced power factor)
Three phase quality:	Voltage unbalance ratio, Current unbalance ratio
Harmonic quality:	Harmonic voltage, Harmonic current, Harmonic power, Harmonic voltage/current phase angle, Total harmonic voltage distortion, Total harmonic current distortion (THD-F, THD-R),
Measurement method:	Simultaneous digital sampling of voltage and current (sampling frequency 10.24 kHz per channel)
Interval settings:	Auto / 1 / 5 / 10 / 15 / 30 / 60 minutes
Recordable period:	125 days maximum; partition memory into four segments for maximum 31 days of recording each
Internal memory:	4 MB non-volatile
PC Interface:	USB 2.0
Dimensions:	5.1" W x 9.7" H x 2.5" D (128 x 246x 63 mm)

Hioki AC/DC Current Monitor



Choice of measurement mode:

- DC (for battery measurement)
- AC+DC RMS (for full-/half-wave rectification measurement)
- AC RMS (for current distortion measurement)
- PEAK (for peak value measurement of inrush current, etc.)
- Selectable recorder output and response time
- Current integral, operating time/duty measurements (3290-10)

ORDERING INFORMATION

HK/3290	Clamp-On AC/DC HiTester
HK/3290-10	Deluxe Clamp-On AC/DC HiTester
HK/9691	100A AC/DC Clamp-on Sensor (600V, Ø35 mm jaw)
HK/9692	200A AC/DC Clamp-on Sensor (600V, Ø33 mm jaw)
HK/9693	2000A AC/DC Clamp-on Sensor (600V, Ø55 mm jaw)
HK/9445-02	AC Adapter
HK/9400	Carrying Case

Includes: carry strap, 4 AA batteries. Order clamp-on sensor separately.

SPECIFICATIONS

Current measurement:	AC RMS, AC MEAN, AC+DC, DC
Current ranges:	20 to 100A with 9661 clamp 20 to 200A with 9662 clamp 200 to 2000A with 9663 clamp
Frequency:	10 to 1000 Hz
Analog outputs:	DC or AC Current: 2V f.s. Level output with REC mode Waveform output with MON mode Integ./Frequency: 1V/f.s.
Accuracy:	Current: $\pm 1.3\%$ rdg. ± 3 digits. (typical) Frequency: $\pm 0.3\%$ rdg. ± 1 dgt. (typical at 50/60Hz)
Frequency response:	$\pm 2.3\%$ rdg. ± 8 dgt. (DC to 1 kHz)
Digital display:	4 digit, maximum 3000 counts (9999 counts on 3290-10)
Bar display:	20 segments
Sampling rate:	Fast: 4 times / sec (3290-10: 10times/sec), Normal: 2 times / sec, Slow: 1 time / 3sec
Crest factor:	2.5 or less
Max. circuit voltage:	600 V AC rms. (insulated wire)
Dimensions:	6.1" W x 3.6" H x 1.9" D (155 x 98 x 47 mm)
3290-10:	Polarity specific integral function measures battery charging and discharging. Peak current display shows peak charge and discharge.

AEMC Three-Phase Power Quality Analyzers



**PowerPad™
3945B**



SPECIFICATIONS

Electrical

Sampling Frequency	256 samples/cycle
Data Storage	3945B: 4MB 8335: 2GB SD card
Voltage (TRMS)	3945B: 960V Ø-Ø, 480V Ø-N 8335: 10-1000V Ø-Ø & Ø-N
Current (TRMS)	MN Clamp: 5mA to 100mA/120A or 2 to 240A MR Clamp: 10 to 1000Aac, 10 to 1400Adc SR Clamp: 3 to 1200A AmpFlex™: 10 to 6500A (Crest factor at 6500 = 1)
Frequency	40 to 69Hz
Other Measurements	kW, kVAR, kWh, kVARh, KVAh, K-Factor, Flicker 3945B: PF, DPF 8335: INrush
Harmonics	1st to 50th, Direction, Sequence
Power Source	9.6V NiMH rechargeable battery pack AC Supply: 110/230VAC ±20% (50/60Hz)
Battery Life	≥8 hrs with display on; ≥35 hours with display off (record mode)
Mechanical	
Communication	Port Optically coupled RS-232
Display	1/4 VGA (320 x 240) color LCD
Dimensions	9.5 x 7 x 2" (240 x 180 x 55mm)
Weight	4.6 lbs (2.1 kg)
Safety Rating	3945B: 600V CAT III 8335: 1000V, CAT IV

- True RMS single-, two- and three-phase measurements at 256 samples/cycle, plus DC
- Real-time color waveforms
- Easy-to-use on-screen setup
- Automatic current probe recognition and scaling
- True RMS voltage and current measurement
- Measures DC volts, amps and power
- Display and capture voltage, current and power harmonics to 50th order, including direction, in real time
- Capture transients down to 1/256th of a cycle
- Phasor diagram display
- VA, VAR and W per phase and total
- kVAh, VARh and kWh per phase and total
- Neutral current display for three-phase
- Transformer K-factor display
- Power Factor, displacement PF display
- Captures up to 50 transients
- Short-term flicker display
- Phase unbalance (current and voltage)
- Harmonic Distortion (total and individual) from 1st to 50th
- Alarms, surges and sags
- Screen snapshot function captures waveforms or other information on the display
- Includes DataView® software for data storage, real-time display, analysis and report generation



All models include three color-coded current probes with 10 ft leads (MN93 example shown), four* color-coded 10 ft voltage leads, four* color-coded alligator clips, RS-232 DB9F optically coupled serial cable, NiMH battery, US 120V power cord, DataView® software, carrying bag, soft carrying pouch and user manual.

*Five in 8335 Kits

ORDERING INFORMATION

AE/2130.75	PowerPad™ Model 3945B w/MN93 (240A)
AE/2130.76	PowerPad™ Model 3945B w/SR193 (1200A)
AE/2130.77	PowerPad™ Model 3945B w/24" AmpFlex™ 193-24 (6500A)
AE/2130.78	PowerPad™ Model 3945B w/36" AmpFlex™ 193-36 (6500A)
AE/2130.79	PowerPad™ Model 3945B w/MR193 (1000Aac/1400Adc)
AE/2130.80	PowerPad™ Model 3945B w/MN193 (6A/120Aac)
AE/2136.21	PowerPad® Model 8335 w/MN93 (240A)
AE/2136.22	PowerPad® Model 8335 w/SR193 (1200A)
AE/2136.23	PowerPad® Model 8335 w/24" AmpFlex® 193-24 (6500A)
AE/2136.24	PowerPad® Model 8335 w/36" AmpFlex® 193-36 (6500A)
AE/2136.25	PowerPad® Model 8335 w/MR193 (1000AAC/1400ADC)
AE/2136.26	PowerPad® Model 8335 w/MN193 (5A/120AAC)

Accessories (Optional)

AE/2140.14	Set of three color-coded MN193 probes (6A/120A) with 10 ft leads
AE/2140.17	5A Adapter box
AE/2140.61	Set of four color-coded 30 ft voltage leads
AE/2140.24	Set of three color-coded MN93-30 probes (240A) with 30 ft leads
AE/2140.25	Set of three color-coded SR193-30 probes (1200A) with 30 ft leads
AE/2140.26	Set of three color-coded 24" AmpFlex™ 193-24-30 probes (6500A) with 30 ft leads
AE/2140.27	Set of three color-coded 36" AmpFlex™ 193-36-30 probes (6500A) with 30 ft leads
AE/2140.28	One AC/DC Current Probe Model MR193-BK (black connector) (1000Aac/1400Adc)
AE/2140.29	Set of three color-coded MN193-30 probes (6A/120A) with 30 ft leads
AE/2140.30	Set of three color-coded MR193-30 probes (1000Aac/1400Adc) with 30 ft leads

AEMC Single-Phase Power Quality Analyzer



▲ **8230 PowerPad® Jr.**

DataView® Software included with Model 8230

- Display and analyze real-time or recorded data on the PC
- Configure all PowerPad® Jr. functions & parameters
- Customize views, templates and reports
- Create and store a complete library of configurations
- Zoom in and out and pan through sections of the graph
- Display waveforms, trend graphs, harmonic spectrums, text summaries, transients, event logs & stored alarms

ORDERING INFORMATION

AE/2130.82	PowerPad® Jr. Model 8230 w/MN93-BK (240A)
AE/2130.83	PowerPad® Jr. Model 8230 w/SR193-BK (1200A)
AE/2130.84	PowerPad® Jr. Model 8230 w/24" AmpFlex® 193-24-BK (6500A)
AE/2130.85	PowerPad® Jr. Model 8230 w/36" AmpFlex® 193-36-BK (6500A)
AE/2130.86	PowerPad® Jr. Model 8230 w/MR193-BK (1000AAC/1400ADC)
AE/2130.87	PowerPad® Jr. Model 8230 w/MN193-BK (6A/120AAC)

- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak value and K-Factor
- Calculates and displays Watts, VARs and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for Volts and Amps through the 50th harmonic
- Captures, displays and stores inrush current waveforms and statistics

- Stores up to eight screen captures
- Stores up to 1MB of trend recorded data
- Configurable from DataView® software or front panel
- Captures up to 4096 alarm events using up to 10 different thresholds
- Displays and records up to 17 different power quality parameters
- Includes DataView® software for data storage, real-time waveform display, analysis and report generation

SPECIFICATIONS

Electrical	660V Phase-to-Phase, 600V Phase-to-Neutral
Voltage (TRMS)	MN Clamp: 5mA to 120A or 2 to 240A
Current (TRMS)	MR Clamp: 10 to 1000AAC, 10 to 1400ADC
	SR Clamp: 3 to 1200A
	AmpFlex®: 10 to 6500A (Crest factor at 6500 = 1)
Frequency	40 to 70Hz
Other Measurements	kW, kVAR, PF, DPF, kWh, kVARh, kVAh, K-Factor, Flicker, Harmonic Phase Shift, Phase Rotation
Harmonics	THD-R, THD-F, V, A, VA
	1st to 50th, Direction, Sequence
Sampling Frequency	256 samples/cycle
Data Storage	1.5MB partitioned for waveforms, alarms & trend
Power Source	NiMH AA rechargeable battery pack
	AC Supply: 120/230VAC (50/60Hz)
Battery Life	>Eight hrs with display on, >40 hrs with display off (recording mode)
Mechanical	
Communication Port	Optically isolated USB
Display	1/4 VGA (320 x 240) color LCD
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)
Safety Rating	EN 61010, 600V Cat. III, Pollution Degree 2

AEMC Power Quality Meter



▲ **8220**

- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak value and K-Factor
- Calculates and displays Watts, VARs and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for Volts and Amps through the 50th harmonic
- Captures and displays inrush current
- Calculates & displays phase rotation & RPM

- Displays °F or °C & resistance to 2000Ω
- Conducts continuity and diode tests
- Stores up to nine complete sets of readings for all volt, amp, power, harmonics and other measurements
- Configurable from DataView® software or front panel
- Operates off batteries or optional AC adapter
- Includes DataView® software for data storage, real-time waveform display, analysis and report generation

SPECIFICATIONS

Voltage (TRMS)	660V Phase-to-Phase, 600V Phase-to-Neutral
Current (TRMS)	MN Clamp: 5mA to 120A or 2 to 240A
	MR Clamp: 10 to 1000AAC, 10 to 1400ADC
	SR Clamp: 3 to 1200A
	AmpFlex®: 10 to 6500A (Crest factor at 6500 = 1)
Frequency	40 to 70Hz
Other Measurements	kW, kVAR, PF, DPF, VA, Harmonics, Phase Rotation, Temperature, RPM, Resistance, Continuity, Diode Test
Sampling Frequency	256 samples/cycle
Data Storage	Stores nine sets of readings
Power Source	Six 1.5V AA Alkaline batteries (>8hr life with display on)
	AC Supply: 120/230VAC (50/60Hz) - optional
Communication Port	Optically isolated USB
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)

Three-line backlit digital display with custom icons

ORDERING INFORMATION

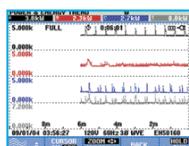
AE/2130.91	Power Quality Meter Model 8220 w/MN93-BK (240A)
AE/2130.92	Power Quality Meter Model 8220 w/SR193-BK (1200A)
AE/2130.93	Power Quality Meter Model 8220 w/24" AmpFlex® 193-24-BK (6500A)
AE/2130.94	Power Quality Meter Model 8220 w/36" AmpFlex® 193-36-BK (6500A)
AE/2130.95	Power Quality Meter Model 8220 w/MR193-BK (1000AAC/1400ADC)
AE/2130.96	Power Quality Meter Model 8220 w/MN193-BK (6A/120AAC)

Fluke Three Phase Power Quality Analyzers



The Fluke 435 and 434 three-phase power quality analyzers help locate, predict, prevent and troubleshoot problems in three-phase and single-phase power distribution systems. The new IEC standards for flicker, harmonics and power quality are built in.

- Analyzer trends using cursor & zoom tools even while background recording
- Seven hours operating time per charge on NiMH battery pack
- Transfer data files to your PC for reporting and analysis using FlukeView® software



- Automatic transient capture: never miss an event
- Auto Trends: don't waste time setting up recordings



- Four voltage and four current channels capture waveform data on all phases simultaneously
- Meter display of phase readings

435 Includes: Hard carrying case with rollers, four flexible current probes (i430-flex), five test leads and clips, battery charger, FlukeView software, Power Log software, optical USB cable, color localization set, Getting Started manual, Users manual.

434 Includes: Hard carrying case, four current probes (i400s), five test leads and clips, battery charger, FlukeView software, optical USB cable, color localization set, Getting Started manual, Users manual.

3 Year warranty

ORDERING INFORMATION

Fluke 435 30 Power Quality Analyzer
Fluke 434 30 Power Quality Analyzer

Feature	435	434
Measure voltage, current, dips, swells, interruptions, harmonics, inter-harmonics, flicker, power, energy, transients, frequency, unbalance, inrush, EN50160 overview	•	•
Logger function with multiple parameters	•	Optional*
Mains signalling	•	Optional*
Current probes	3000A flexible (4)	40/400A clamp (4)
Memory	16MB	8MB
Software	Power Log & FlukeView	FlukeView
IEC61000-4-30 Class A compliance	•	•
Safety rating	CAT IV 600 V/CAT III 1000 V	
Battery life	Up to 7 hours/charge	

*Optional function can be added with upgrade kit.

SPECIFICATIONS

System Configuration	1Ø+neutral, 1Ø split phase, 1Ø IT no neutral, 3Ø WYE, 3Ø Δ, 3Ø IT, 3Ø hi leg, 3Ø open leg, 3Ø 2-element, 3Ø 2½-element
Voltage Inputs	Four (3 phases + neutral), dc coupled
Maximum	1000V rms, 6kV maximum peak measured
Bandwidth	>10kHz, up to 100kHz for transient display
Accuracy (ac+dc)	435: ±0.1% of nominal voltage, 434: ±0.5% of nominal
Current Inputs	Four ((3 phases + neutral), dc coupled
Range	Determined by clamp-on probes used
Nominal Frequency	40-70Hz, BW >10kHz
Accuracy (ac+dc)	435: ±0.5%±20d, 434: ±1%±5d (with supplied probes)
Watts (VA, VAR)	1.0-20.00MW (resolution 0.1 to 1 kW)
Accuracy	435: ±1%±10d, 434: ±1.5%±10d
Sampling	16 bit resolution. 200k samples/second max
Logger Function	Captures up to 10000 events, 100 parameters/phase
Display	4.5" x 3.4" Color LCD, 320x240 pixel
Power	115/230V ac or battery, built-in battery charger

Fluke Power Quality Analyzer



- Voltage, current and power harmonics up to 51st
- Total harmonic distortion (THD)
- Phase angle of individual harmonics
- Watts, power factor, displacement power factor, VA and VAR
- Voltage and current waveforms
- Calculates 3Ø Power on Balanced Load from 1Ø Measurement
- Use cursors to read time and date of sags and swells.
- Catch voltage transients and waveform distortion
- See current at the instant of voltage events
- Catch and save up to 40 transients
- Correlate the cause of distortion with time and date stamps
- 3 Year Warranty

The Fluke 43B includes a hard case, voltage and current probes, FlukeView® PC software and cable, line voltage adapter/battery charger, applications manual, power quality video and user's manuals.

ORDERING INFORMATION

Fluke 43B Power Quality Analyzer

The Fluke 43B Power Quality Analyzer performs the measurements you need to maintain power systems, troubleshoot power problems and diagnose equipment failures. All in a rugged handheld package.

Function	Measurement	Accuracy/Selection
Volts	5.000V-600V RMS (AC & DC)	
Amps	50.00A-50.00kA RMS (AC & DC)	±(1%+10d)
Mains Frequency	40.0-70.0Hz	±(0.5%+2d)
Watts, VAR, VA	250W-2.5MW	±(4%+4d)
PF, DPF	0.25-1.00	±0.04
Sags & Swells	Voltage and Current	4 min-16 days selectable
Transient Capture	40 ns pulse width	Select 20/50/100/200% above or below line voltage
	Up to 40 transients	
Thrush Current	1A to 1000A	1s to 5 min selectable
Ohms	500.0Ω to 30.00MΩ	±(0.6%+5d)
Capacitance	50.00nF to 500.0μF	±(2%+10d)
Scope	Dc, ac, ac+dc, peak, peak-peak, Hz, duty cycle, phase, pulse width, crest factor	Sampling rate: 25MS/sec Bandwidth: Voltage BW (Channel 1): 20MHz Current BW (Channel 2): 15kHz
Screen Saves	All functions	10 screens
Recording	V/A/Hz, Power, Harmonics, Ω/Cap, Temperature, Scope	4 min-16 days selectable parameters in each display mode

Battery life: Rechargeable Ni-Cd pack (charger included), 6 hrs typical (continuous)

OPTIONAL ACCESSORIES

i200s	240A AC current probe
80i-1000s	1000A AC current probe
i2000flex	2000A flexible AC current probe
80TK	Thermocouple module
80T-IR	Non-contact infrared temperature probe
PAC91	Parallel printer adapter